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THE VETERINARY JOURNAL

A Monthly Review of Veterinary Science.

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Sub-Editor:
GLADSTONE MAYALL, M.R.C.V.S.

AUGUST, 1924.

Editorial

THE DUTY OF OUR PROFESSION TO THE MUNICIPALITY.

THAT the veterinarian has an important duty to perform in municipal life is proved beyond question by the value which has accrued to the large cities and municipalities which have had the forethought and good sense to institute a whole-time veterinary department, but that the private practitioner has also a duty to perform in this direction, and that he may by his own individuality make his weight felt, has not been demonstrated to the extent which it ought to have been. A recent article in a paper of considerable influence in the politics and public life of Yorkshire illustrates full well what the private practitioner may do if he is only made of the right stuff and will take the trouble to do his duty. The *Huddersfield Examiner* for June 7th contains an article headed "Milk and Meat. The Part of the Veterinarian in Public Health Administration," which was one of the subjects allotted to the conference of members and officials of the Huddersfield County Borough Council and others interested in agricultural questions, and commences with the following quotation: "From the local point of view the outstanding feature of the conference is the realisation of the success that has attended the appointment of Mr. J. McKinna, F.R.C.V.S., as Administrator of the Milk and Dairies Orders and Acts with the object of ensuring a clean milk supply," and we congratulate our colleague Mr. J. McKinna, F.R.C.V.S., who is well known to all of us as a recent President of the Royal College of Veterinary Surgeons, on the success which he has attained for the profession [illegible]e well-known courtesy and tact which has made his career as [illegible]ccessful in this direction

as an Administrator of Public Health duties, as in that of veterinary politics.

We are told on the word of Alderman Stephens, the Chairman of the Public Health Committee, that "Mr. McKinna's appointment had been made with a view to improving conditions and giving proper advice with the ultimate object of providing for the town a supply of clean milk." He stated that "they had no complaint to make as to the quality of the milk from the point of view of fat content, but that there was a good deal to be done in regard to the cleanliness of the supply, and the householders could do much in this direction by seeing that their utensils for containing the milk were kept clean, and insisting upon those who delivered the milk maintaining cleanly habits and methods." Alderman Stephens tersely hit the right nails on the head in these few words, and Mr. McKinna in his paper "pointed out the useful part that the veterinarian can play in relation to the public health of the community, especially in regard to the production of milk and the safeguarding of the milk supply." He stated "that this branch of the public health service can only in its fullest sense be productive of the most good to the community by supervision of definite local areas, each veterinarian having an area assigned to him." He emphasises, too, a point in which the veterinarian who has made himself popular with his *clientèle* can, by his own personality, do intensive good, for he stated that "the personal acquaintance with men and farmers with whom he was dealing would be found to be of considerable assistance. To himself this knowledge had been of the greatest value." The Corporation had felt that, "because he was a veterinary surgeon, he would understand their position and difficulties better. He was glad to be able to bear testimony that their ready response to his suggestions had far exceeded his most sanguine expectations. A large number of farmers were already producing Grade 'A' milk, and if the habits which were forming became fixed ones, he had no fear for the future milk supply of Huddersfield."

What Mr. McKinna has done for Huddersfield as a private practitioner, who has secured the confidence of his Borough Council, can be done by every other practitioner who lives in a municipal area, and in addition to the reward which he had of the innate knowledge of good work done, it would be sufficient for the mind of any conscientious worker to be aware that he had thus demonstrated the value which can accrue from the proper application of a veterinary training. But we read further down in the column that in the discussion "many tributes were paid to the efficiency and tactfulness of Mr. McKinna's work, and by no one more authoritatively than by the

Medical Officer of Health, Dr. Ruston, who said " that the municipality was tackling the problem in the right way, building up from the bottom. They should devote their energies to keep the milk clean from the first, and to pay particular attention to the sterilisation of the vessels. They should concentrate on local production of milk, on having it clean, and on education amongst farmers, distributors, and householders."

Huddersfield has been especially fortunate in its selection, but other Municipalities can be equally so if we only look after our rights, and we commend the serious consideration of the question to every member of the profession.

THE QUESTION OF EDUCATION FOR THE INDIAN CIVIL VETERINARY SERVICE.

EDUCATION was given a prominent place in the last Conference of Veterinary Officers held in Calcutta and was very fully discussed. It is clear that conditions in India combine to make the educational problem involved and complicated, more particularly in regard to the existing financial position and the policy (or lack of policy) hitherto pursued.

The members of the Conference were not entirely unanimous in respect to the length of study required to educate Indian veterinarians, the cleavage being due in the main to the expense involved in adopting a four years' course for general application. At a previous Conference it had been resolved that a four years' course of study was desirable for all, and we are surprised that a majority of members agreed on the present occasion to a course of three years.

Our impression is that Indians generally have little natural aptitude or taste for animal industry, and that a longer course than three years is required to turn out efficient practitioners.

We are inclined to agree with some of the speakers that a temporary solution of the existing difficulties would be to provide a proportion of well-educated Indian veterinarians who have gone through a course of study extending over at least four years in order to qualify them for superior appointments, and a proportion of dressers to act as assistants.

The latter class would be given a short course in first aid, and should be definitely and permanently relegated to subordinate officers. It does not appear desirable to give superior appointments to men who have had no basic scientific training. It was pointed out by several speakers that post-graduate courses in pathology and hygiene without previous knowledge of chemistry, biology, and histology must be unprofitable.

The system of recruitment of Indians to the Imperial Veterinary

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Service in India is a difficult problem. A number of young Indians who have received scholarships are being educated in Great Britain, and provided these are carefully selected this solution appears to promise the best results at present. We trust that those who have been selected have a real inclination for the profession, and are not mere beneficiaries of a benevolent Government.

The Government of India have decided to promote a proportion of the existing subordinates to the Imperial grade, although it is admitted that their attainments, even with a superstructure of post-graduate education, are insufficient. This appears to be a strange proposition, and it must be inimical to the future interests of the Service. It would surely have been wiser to have waited until men of superior attainments were available. The institution of the four years' course approved by the Conference at one or more of the existing colleges would be a step in the right direction. We understand that the Punjab College has already instituted such a course. Until higher veterinary education is developed in India, we agree with the resolution of the Conference that the Imperial Service should be confined to candidates who possess the diploma of the Royal College of Veterinary Surgeons, and in view of the special problems in India a large proportion of officers should be specially qualified to undertake research.

CONTAGIOUS DISEASES OF ANIMALS IN INDIA.

THE great economic importance of dealing effectually with anthrax in India was fully brought out in the discussion on the disease at the last Conference of Officers of the Indian Veterinary Service held in Calcutta, and certain specific resolutions were brought forward in regard to its control, which the Government of India would be well advised to consider carefully. The subjects of rinderpest in respect to control by inoculation, trypanosomiasis with special regard to the treatment of surra, contagious abortion, tuberculosis, parasitology, infectious lymphangitis in cattle, nasal granuloma in cattle, rabies, and diseases of sheep were also discussed. In each case the peculiar problems arising in India were exemplified and resolutions were passed bearing on the several points.

The general questions discussed at the Conference were connected with legislation, the methods of obtaining statistical information, animal husbandry, the supply of laboratory products, meat inspection, and the correlation of technical information and method of rendering authoritative advice. The inadequacy of the present arrangements in respect to these important matters was very strikingly brought out, and we trust that the Government of India will not only digest the discussions and resolutions but decide to act quickly.

It must be apparent to any reader of the proceedings that from every point of view India has everything to gain from the establishment of a strong and efficient veterinary service. Agricultural stock in India represents great wealth, and its economic importance does not appear to have been fully realised. Failure to recognise the scope of veterinary endeavour is not confined to the Indian Government, but whilst we recognise the difficulties in dealing with an ignorant peasantry are very considerable, we consider, nevertheless, that the Indian Veterinary Service should be properly organised in order that the problems before it may be effectually dealt with as far as is possible.

General Articles

HORSE-FAT AS A BASIS FOR OINTMENTS.

By Lieut.-Colonel RAINEY, C.B.E., M.R.C.V.S.,
London.

Ointments are no doubt used far less than formerly in veterinary practice, but it is not possible to dispense with them entirely. Their use is as a rule necessary at some stage of the treatment of granulating wounds, and in affections of parts such as the hollow of the horse's heel where the normal skin is subject to continual flexion.

Much evidence was obtained in the experimental treatment of mange during the Great War, with medicaments in a fatty basis, of the dermatitis which may be produced to a varying degree by the application to the skin of soft paraffin and animal and vegetable fats. Whether this irritation of the tissues is due always to chemical action or to a reaction to specific organic substances has not, so far as the writer knows, been determined, nor is it relevant to the subject of these remarks.

Consideration of these phenomena, and especially of the fact that horse-fat as a basis for medicaments in the treatment of mange was never found to cause dermatitis, led to the supposition that horse-fat ought to be used exclusively as a basis for ointments intended for the treatment of appropriate conditions in the horse.

Messrs. Hewlett some time ago prepared a zinc ointment with a sterile horse-fat basis for the writer, who has since used this preparation with or without the addition of other medicaments in all circumstances where ointments were indicated.

The results, notably in conditions of the horse's heel, have been better than those that were formerly obtained with the usual ointments, and there seems to be no room for doubt, either on scientific

or practical grounds, that horse-fat is indeed to be preferred for the purposes of equine practice to soft paraffin and lard.

Horse-fat alone has too low a melting-point for the purposes of ointments in hot climates. It would be necessary to give consistency by adding a proportion of hard paraffin, and experiment would be needed to determine whether this addition would cancel the advantages of the pure horse-fat.

POISONOUS ACTION OF CERTAIN DRUGS.

By HENRY GRAY, M.R.C.V.S.,
Earl's Court.

Oil of Sassafras frequently poisons dogs, cats, parrots, and other animals to which it is applied for lice. Because it may be safely applied to the small human scalp, medical men, chemists and others assume that it is safe to apply all over the surface of the body of an animal. One client, a chemist, sold a fox-terrier puppy, just weaned, for £30 and got the money. As it had lice on it he applied oil of sassafras, with the result the pup was dead in a few hours, and the £30 had to be refunded. A dog-dealer had a litter of pups from the country for sale. On arrival he found they had lice, and applied oil of sassafras. There is no doubt he killed the lice as well as the litter. One symptom was internal oblique squint with protrusion of the membrana nictitans, and anarcosis resembling that of morphine narcosis. A friend had a valuable parrot, believed to be the only specimen of its species in the United Kingdom. It took to feather-pecking, and his medical friend and fellow ornithologist advised him to apply oil of sassafras with the object of killing any external parasite that might be the cause of the irritation. The advice was followed faithfully, and the bird was dead in a couple of hours. I made the post-mortem, and the muscular tissue and, in fact, the whole of the system was permeated with the odour of the oil. No more amateur advice would this owner take. But he was too late; the deed was done. *This is a dangerous drug unless used with great circumspection.*

Arsenic, when given in large or excessive doses to those animals that can vomit readily, is not dangerous. I knew of a dachshund that received 10 grains of white arsenic and a Griffon Bruxellois 5 grains twice a day for a week on the food. Beyond causing vomiting soon after taking the food, there did not seem to be much upset beyond congestion and swelling of the conjunctivæ. Liquor arsenicalis, unless diluted very largely in milk or water or sprinkled on the food, will induce vomiting and swelling of the conjunctivæ even in 3- to 5-minim doses repeated twice a day.

Rats will take excessive doses of arsenic without any harm ; they can withstand four times the mortal dose for man. But when taken in closely interspaced minute doses they readily succumb to its influence.

It is difficult to kill cats and dogs with arsenic—in fact, with any irritant poison, because these animals vomit so easily and reject it.

Podophyllin is somewhat dangerous to dogs and cats. If given in too large a dose it will destroy them by cardiac failure following gastro-enteritis. These species, especially when pampered, are very susceptible to its influence. It is a drug that can be dispensed with in veterinary practice. I have made several post-mortem examinations of dogs destroyed with it, when administered as an aperient in pill form.

Areca Nut is occasionally a poison, more especially when a dog is suffering from incipient distemper or from enteric catarrh. It causes death by cardiac failure resulting from intense enteritis and a discharge of bloody mucus. It, like all other vermifuges, should be given *only when the animal is in perfect health.* It is very deadly to young puppies, and cats are more susceptible to its injurious effects than dogs. In some dogs, especially those with infrequent and intermittent pulsations of the heart with long pauses between each beat, it may create syncope. Such attacks may recur after each dose.

Morphine, if given in a large dose to an aged dog suffering from chronic bronchitis, commonly but erroneously termed asthma, will certainly stop the cough very quickly, but may at the same time terminate the life of the animal. In cold weather it seems to have an injurious influence on aged animals when given as a pre-anæsthetic narcotic for a surgical operation. It appears to create a post-operative shock—lowered temperature, coldness of body, twitchings, great dullness or indifference, and death in two or three days. Morphinisation lowers the defences to microbial infections.

Cantharides, when applied as an ointment to the chest of horses in chronic pleurisy, and to the skin of other parts of the trunk in other chronic internal inflammations, frequently does not " take " or cause a reaction in the form of vesicles, dermatitis, or swelling of the skin. In such cases it is absorbed into the system and sets up gastro-enteritis and catarrhal inflammation of the urinary tract with strangury. Under these circumstances the animal should be destroyed. I have never seen a case recover where a revulsant did not cause a reaction. The same remarks apply equally well to the application of biniodide of mercury under similar conditions.

Neither *mustard* nor *tobacco,* even when ingested in large quantities by goats, is injurious ; in fact, these animals seem to relish them.

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Rhododendron, box and *laurel* are not so dangerous to these animals as they are to other ruminants. Rhododendron may cause loss of appetite, prostration, coldness of extremities, inrumination and diarrhœa, but I have never witnessed a death from it. They eat ivy with avidity, and are none the worse after consuming large quantities. I am giving my own experience, which might differ from that of others.

Oil of Tar, and other tarry compounds, unless used in minute quantities or neutralised by alkalies, are very poisonous when applied to a large surface of the skin in any species, more so for the dog and much more for the cat. I have seen their toxic effects in all the domesticated animals. If neutralised, they lose a great deal of their parasiticide effect. An ounce of the oil of tar in a pint of oil containing sulphur and used largely as a skin dressing kills a great number of dogs, especially house or pet dogs and those having a thick coat. Even common paraffin or kerosene if used in too concentrated a form will frequently set up toxic symptoms and, not rarely, death. Storax, peruvian balsam, and similar parasiticides, in ointment or liniment, if applied to the cat, will occasion numerous fatalities. Although tarry compounds are usually fatal to the cat, I have seen a cat recover after falling into a barrel of tar and receiving no care or attention from the owner. A broken skin absorbs much more readily than when the surface is intact.

We must not reason too much from analogy. The various species of animal differ from one another, and what is injurious to one species may be harmless to another. Even the conditions under which a species may be maintained play a very important part in susceptibility to toxic products. What can be well supported by a tough-living shepherd or farmyard dog would prove injurious or fatal to a soft, pampered animal; and to a dog in good health drugs can be borne better than to one in disease and *vice versa*. We must observe each species separately, and not apply our deductions from one species to another species. Fowls can withstand many times the mortal dose of strychnine, morphine and other alkaloids for man or even dog. On the contrary, poultry are more susceptible to chloroform and æther than mammals. Intoxications or poisonings may be divided thus :—

(1) Therapeutical intoxications (error, lack of judgment or idiosyncrasy).
(2) Accidental intoxications (carelessness on part of others, or straying on part of animals).
(3) Wilful intoxications. Sub-divided: malicious; intentional with humane object.

Clinical Articles.

TREATMENT OF GRASS-ILL OR WEATHER-ILL.

By W. T. HEWETSON, M.R.C.V.S.,
Brampton, Cumberland.

This disease appears in two forms, namely, acute and subacute.

It may not be necessary to describe the symptoms of the disease in detail, nevertheless, to make the method of treatment of the disease quite clear, it may be helpful to describe the most outstanding symptoms and to explain why the terms "acute" and "subacute" have been used.

In the acute form the abdomen of the animal is abnormally distended, particularly in the region of the flanks. It is never tucked up. Patches of perspiration are almost always noticed on different parts of the skin. There may be evidence of abdominal pain, the horse occasionally looking towards the flanks, and lying down. The pain is not always acute, sometimes the horse appears only dull and listless. The pulse is often found fast and feeble, the temperature elevated, frequently to 104° F. or 105° F. If some fæces be taken from the rectum and examined, they will be found to be more or less covered with a thick whitish mucus. Tremors are also usually seen on the shoulder and gluteal muscles.

At times the symptoms of the acute form are not so pronounced. The patchy perspiration may be almost absent, the animal appears dull, the pulse is found to be slightly faster than normal, but strong; the temperature may be up to 105° F., and the fæces covered with mucus. A horse showing these symptoms can often be treated with success.

In the subacute form the horse is tucked up in the flanks. The muscles over the body and neck feel hard and tense. Tremors are seen on the muscles of the shoulder and hip. There is a moist condition of the skin covered by the tail, and the tail is held tightly down. Here again the fæces in the rectum are found covered with mucus. In this form the pulse is quickened, but is strong and full, though it may feel irritable. The temperature is normal or slightly elevated, but occasionally it may be 105° F. Some of the subacute cases make a noise when breathing, as if the nostrils were obstructed. In both the "acute" and "subacute" form, saliva may dribble from the mouth when it is opened.

Treatment of the Acute Form.—This is the most dangerous form to deal with, as the bowels often fail to respond to opening medicine. Consequently the patient dies from poison absorbed into the system

in twelve to fifty hours, without having passed a single motion, due to complete paralysis of the posterior bowels. If the bowels do respond to purgatives the case is soon on the highway to recovery.

In the acute form the trocar and canula may be used with good effect and may afford considerable relief. The medicines used in the treatment of the acute form of the disease were Aloes, Nux Vomica, Pulv. Ammon. Carb., Arecolin Hydro-Bromide; and when pain was manifest, Chloral Hydrate, Ammon. Carb., and Carbolic Acid, made into a ball was given as a sedative.

Treatment of the Subacute Form of the Disease.—This is the form that is most commonly seen in practice. The patient ought to be placed in an airy, well-ventilated, comfortable loose box, free from draughts, and must be well sheeted. All straw, hay, grass, or dry fodder must be removed from the box, as well as all bags and ropes. The bed must consist of moss-litter or sawdust. In the course of a few days, when the horse begins to eat, it must be muzzled, otherwise it may eat the woodwork, namely the manger, rack, or door.

As all the cases are more or less affected in their swallowing, it is inadvisable to give medicine in liquid form, as there is a danger of choking; fluid easily gains access to the lungs, giving rise to septic pneumonia, and abscess formation, which in time kills the patient.

In the first place the horse must be purged, but not drastically. It is important to try and gauge the proper dose of aloes to do this. It is harmful if a second dose has to be given, as it has a tendency to completely destroy the appetite. In my experience the horses that dribble saliva when the mouth is opened require a larger dose of opening medicine at the commencement. When the bowels are once open, no more purgative medicine is required. The bowels are kept open by diet, and diet alone. The patient must be fed on soft food for at least a month, until all tremors of the muscles have ceased, all perspiration disappeared, as well as gnashing and grinding of the teeth. A month on soft food is generally a sufficient length of time, but some cases have to be kept on soft food for six weeks, or more, before all the poison is eliminated from the system, and the raw and congested inner surface of the bowel is completely healed, and able to withstand any dry or solid food.

Medicinal Treatment of the Subacute Form of the Disease.—At the commencement an Aloes ball is given of sufficient strength to open the bowels. In this district a 7-dram ball is required, with the aid of stimulating balls, given at intervals during the first twenty-four hours, containing Ammon. Carb. and Nux Vomica. When the horse begins to take soft food, and this may be in three to five days after the bowels are opened, a teaspoonful of Fulv. Nux Vomica is given

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in the food once or twice daily until the bowels are seen to move regularly, then only one teaspoonful is given daily. A dessertspoonful of Sodium-bi-Carb. may be given in the drinking water with good effect once or twice a day. Should the horse be over-purged, a dessertspoonful of Chlorodyne or Chloroform-et-Morphia given in the drinking water proves beneficial in checking the excessive evacuations. Some cases may exhibit symptoms of severe pain before the bowels are open. These cases are relieved by administering 1 ounce of Chloral Hydrate, 1 dram of Carbolic Acid, with Gentian Pulv., sufficient to give it consistence, with a little soft soap added to form a ball. Cases suffering from this disease are difficult to ball, therefore every care must be taken to administer the ball properly so as the animal is sure of getting the full dose. Balls should be administered from the balling gun, and should be previously damped. Ammonia Carbonate and Chloral Hydrate are useful drugs, but every care has to be taken to deliver a ball containing them properly, otherwise they will injure the mouth, and this for a time prevents a horse eating when it would otherwise do so. It is advisable after the horse is purged to give a tonic ball once or twice daily, namely Nux Vomica and Gentian Pulv. until he commences to take soft food.

If the horse will not eat after the bowels are opened, or if he will only eat soft food very sparingly, or should he manifest pain by continually trying to micturate, as some cases do, and if this cannot be relieved, the case then often proves fatal. The less sedative medicine required in the treatment, the more likelihood there is of a good recovery. The medicines required after the bowels are opened are Nux Vomica Pulv. and Sodæ-bi-Carb., particularly Nux Vomica. And during the last week of treatment a dessertspoonful of Liquor Arsenicalis given daily proves beneficial.

The only diet allowed consists of scalded bran, linseed jelly, boiled barley in any form, rice, boiled turnips, milk, and linseed, and any soft food of a laxative nature. Some horses are benefited by allowing them treacle in their diet; a liberal supply of common salt should be added to each feed, as it is a laxative, an antiseptic, and it helps the patient to drink water.

If the horse takes to the soft diet after being physicked, its cure is almost certain. The patient may vary in appearance; at times he may be bright, at other times duller and more miserable-looking. Some days the animals will eat better than on other days; but in time the objectionable symptoms will pass away, and the horse will be cured and able to withstand normal diet.

When putting the horse on to grass, small quantities should only be allowed daily until the grass is seen to have passed through the

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bowels. Should the patient during this time show any symptoms of dullness, or should the pulse become weaker or faster due to the grass eaten, the grass must be withheld and again only soft food allowed for another week. If at this time it is considered necessary to administer a laxative to relieve the bowels of the grass eaten, great care must be exercised as regards the dose. Two drams of Aloes now will be quite sufficient to open the bowels. To give more would prove harmful. If the horse shows no dullness, or variation of the pulse, after the grass is seen to have passed through the bowels, it can be turned out to graze all day, but must be housed during the night, and kept in during the daytime should the weather be wet and cold, as the patient cannot bear the cold until he regains condition.

When a horse is undergoing treatment he must not be allowed to come in contact with any horse suffering from a cold, as he is almost certain to contract it and his recovery is then delayed. During treatment it is important to attend to the clothing of the patient, as he suffers very much from cold. The external temperature of the animal is found to vary. When cold, the legs ought to be bandaged or wrapped round with light bags, until they feel warm. Sometimes when the horse is undergoing treatment the weather may vary from extreme hot to cold, consequently the patient must be clothed accordingly, and it should be seen that the clothing is so fixed on that it cannot come off. Otherwise if he receives a chill he may be re-attacked by the disease, and though previously eating well, it will cause him to lose his appetite and again become tucked up in the flanks, and should this happen the horse may be made incurable.

When a horse has been on soft food for three weeks or towards the latter end of the treatment, he may cease to lie down. Should this occur it is then advisable to place him in slings, especially if he happen to be in a loose box where lifting him would be impossible, as in some cases when the horse does lie down, though his pulse is strong and regular, he makes no attempt to rise, and he has to be lifted. Once a horse is cured from this disease, it seldom appears any worse from having suffered, that is, there is seldom any ill results left. Many regain their condition very rapidly, though there are cases that do not fully regain their condition until the following summer. So far I have not known an animal to have a second attack.

Since writing the above article, I had a horse suffering from the acute form of " grass-ill," and as he was a valuable Clydesdale gelding, I asked Mr. George Howie, F.R.C.V.S., who is the Veterinary Adviser for the four Northern Counties of England, and who is stationed at Armstrong College, Newcastle-upon-Tyne, to come and see him.

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On the day previous this horse did not appear to me to be a very serious case, as the pulse was regular, full and strong, and not accelerated. The temperature registered 102° F. The skin was free from patchy perspiration, and the breathing was normal. On examination, the fæces were found coated with mucus, and the lower flanks were full and tense. The owner was familiar with "grass-ill," otherwise this horse would not have been observed to ail at such an early stage, as he only appeared duller and not eating so freely.

A full dose of opening medicine was administered, namely aloes, and stimulating balls were given at intervals, also enemata of soap and water.

The following day, when Mr. Howie saw him, there was a great change for the worse to be seen in the horse, the physic having failed to operate. The pulse was much weaker and running at 104 beats per minute; the temperature registered 105° F., and the abdomen was much more distended. The breathing was now affected, having taken on the double or broken-winded "lift," and the line seen in pleurisy being distinct.

The trocar and canula was passed and a large quantity of gas escaped, which burned with a blue flame. This relieved his breathing considerably. Mr. Howie passed the stomach tube, and emptied the stomach by gravitation through the tube of a great quantity of the vilest stinking fluid and semifluid that could be imagined. To me it appeared to be utterly hopeless for any medicine to have the desired effect if administered into a stomach so full of such filth. The stomach was washed out with a salt solution and thoroughly cleansed, and a salt solution was afterwards injected along with 8 drams of aloes in solution, and left in the stomach. The horse died, as was expected. But had this treatment been adopted when I first saw him, that is when his pulse was normal, there would have been a much greater chance of the bowels responding to the opening medicine. The passing of the stomach tube is so simple and harmless when once you have seen it done. I am thoroughly convinced that this is the proper thing to do in all the acute cases at the commencement and in all the subacute cases that dribble saliva from the mouth, as these are the worst cases to relieve. The passing of the stomach tube in any case cannot do any harm, and it is an excellent means of introducing medicine in liquid form, which is an advantage, as its action is hastened, and every drop can be administered without any fear of choking. And when the stomach has been emptied of its contents, the treatment for stomach tympany, etc., recommended by Mr. W. W. Lang, of Brigg, Lincolnshire, might be adopted, or a modification, with good results. Horses are poisoned

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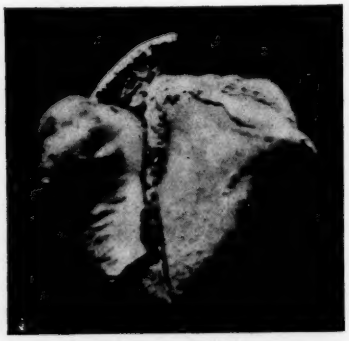
by the decomposition of the ingesta and the absorption of the generated toxin and gases. Once the bowels respond, the after-treatment is simple.

TWO UNUSUAL FRACTURES.

By CAPTAIN R. M. BAMFORD, O.B.E.,
Royal Army Veterinary Corps.

1. SUBJECT.—A troop-horse of the "Queen's Bays."

History.—At evening stables had broken loose on watering parade, and attempting to jump a concrete water trough, 2 feet 6 inches high by 3 feet 6 inches wide, caught both hind legs and came down on the off side.



Symptoms.—Seen next morning, the animal was in acute pain and carrying the off hind limb. A large, tense, and painful swelling involved the area of the stifle joint. Manipulation was resented, and rectal examination revealed nothing abnormal.

Treatment.—Placed in slings and hot fomentation applied.

Course.—The swelling subsided in a week, and the affected limb, which was continually being "snatched," was gradually let down nearer the ground. Later the toe was rested, and the corresponding fore limb could be held up. Only very slight swelling of the stifle remained, though pain was still shown on manipulation. The case was regarded as a traumatic arthritis. After three weeks' observation further treatment was considered useless and destruction was ordered.

Post-mortem.—Vertical fracture of the patella.

2. SUBJECT.—A transport corps mule.

History.—Found at morning stables swinging the near hind leg, and was thought to have been kicked.

Symptoms.—It appeared at once to be a fracture of the tibia. The limb from the lower third of the tibia downwards was swinging and appeared to be adbucted. Interference was strongly resented, and the leg was examined in stocks. A tense, painful swelling extended from the lower third of the tibia to below the hock joint. There was no evidence of external injury and no fracture could be detected.

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A partial fracture of the tibia without displacement was thought probable.

Treatment.—Rested in slings. After a few days the toe was put on the ground. Removed from slings after a week, it was walked a few yards, though very little weight was taken by the affected leg. The hock remained swollen, but the limb downwards was carried vertically

(no abduction) with the toe resting on the ground. On the approach of a stranger the limb was immediately "snatched." The case was entered as an arthritis of the hock joint. No further improvement was noticed and the animal was destroyed.

Post-mortem.—Fracture of the os calcis, possibly caused in the act of kicking.

HYDROCYANIC ACID GENERATED FROM LINSEED CAKE MEAL. A CASE OF POISONING IN CALVES.

By R. F. MONTGOMERIE, B.Sc. (Edin.), M.R.C.V.S.,
Veterinary Adviser, Department of Agriculture, University College of North Wales, Bangor.

That cake prepared from linseed may, even when fed in usual quantities, generate sufficient hydrocyanic acid to cause the death of calves is established and well known to our profession. That the agricultural community is equally conversant with this possibility I doubt. Within one month of the date of taking up my duties here, three cases of sudden death among calves fed on linseed preparations

were brought to my notice. The placing on record of one of these cases, particularly because such record is relatively complete, is, I think, worth while.

My assistance was invited on April 10, 1924, in the investigation of the cause of sudden illness and death among the calves of a Carnarvonshire farm. The following information was received:—

On April 4th "Linseed Calf Meal" was purchased from a local source, and feeding with it commenced at 4.30 p.m. on April 5th. The daily routine of feeding involved the use of this meal twice, a morning feed (7.30 a.m.) and an evening feed (4.30 p.m.), hay being put into the racks as required. The meal was prepared by mixing with lukewarm water and then adding buttermilk. (On this farm, as on most rearing farms in North Wales, it is still the practice to churn whole milk—not cream—and to use the buttermilk for calf feeding.) Immediately thereafter this was fed. Each calf received approximately the same amount of meal—for practical purposes, half a pound. The calves were kept in two boxes: (A) contained six calves aged from one and a half to three months, and (B) nine calves aged from four to six months.

After the first time of feeding one calf was noticed to be "ill," but it was not until the third feed had been given, on the evening of April 6th, that an alarming condition was met. Then all the fifteen calves, with the exception of five of the older lot, showed symptoms. In the words of a non-professional observer, "they had a swollen appearance, staggered about the shed, gasped for breath, and ultimately were unable to stand." These symptoms appeared within ten to fifteen minutes after feeding, and two of the younger lot (A) died in less than fifteen minutes from their appearance.

Mr. W. Jones Parry, M.R.C.V.S., was able to answer the urgent message sent. As a result of treatment—of a similar nature and with a view to checking the marked tympanitis—the remaining calves appeared quite normal two hours after feeding. Mr. Parry observed on post-mortem examination of each of the two calves a similar appearance—marked tympanitis and anæmic appearance of the whole carcase, blanching of the mucous membranes, and easy stripping of the mucous membrane of the abomasum.

Circumstances seemed to point clearly to a diagnosis of food poisoning and placed the "Linseed Calf Meal" under suspicion. From the early appearance of symptoms, the obvious respiratory embarrassment, the threatened collapse and transient nature of the attack, I felt satisfied that the responsible agent was hydrocyanic acid.

Mr. W. McLean, B.A., B.Sc., A.R.C.Sc. (Dublin), A.I.C., of the

Department of Agricultural Chemistry here, was good enough to carry out certain experiments which I suggested. He found a sample of the meal generated 0·048 per cent. of hydrocyanic acid (i.e. 3·26 grs. per lb.). He further showed that after allowing boiling water to act on the meal the generation of HCN was quite negligible. Again, by adding lukewarm water (37° C.) to the meal in a wide-mouthed beaker and allowing this material to stand overnight at room temperature (from 4.30 p.m. until 10 a.m.) the yield was reduced to 0·026 per cent.

The mode of production of prussic acid from such seeds as linseed and Java beans, or preparations of them, and the danger involved by immediate feeding after the addition of lukewarm water to the meal, was explained to the farmer. He was advised as to methods of preparing linseed meal for calf feeding. Two methods were detailed :—

1. By pouring boiling water on to the meal in a bucket, stirring while adding the water, making up with buttermilk to the desired quantity, and then feeding.

2. By stirring the meal up with lukewarm water, allowing it to stand in a warm place for about twelve hours, adding buttermilk and feeding.

Both these methods were adopted, and careful observation by the owner has detected no ill-effects since their commencement.

On inspection, this " Linseed Calf Meal " did not seem to me to differ from Linseed Cake Meal. Professor R. G. Linton, of the Royal (Dick) Veterinary College, Edinburgh, kindly reported on a sample as follows: " . . . it is a cake meal, and I cannot find any signs of adulteration except an odd grain of a cereal. It seems a clean sample."

Conclusions.—During the process of extraction of the oil from linseed the temperature to which the crushed seeds are raised is low. In many cases it does not exceed 70° C. Such temperatures appear too low to render inactive the contained enzyme, by whose action, under suitable conditions, on the cyanogenetic glucoside hydrocyanic acid is produced.

According to Lander, linseed cake rarely yields more than 0·025 per cent. of hydrocyanic acid, but as high a percentage as 0·055 has been obtained. The present sample yielded 0·048 per cent.

It appears from this case that half a pound of linseed cake capable of generating 0·048 per cent. of prussic acid (i.e. 1·63 grs. per half pound) may, if not suitably prepared for feeding, cause the appearance of toxic symptoms in calves up to six months of age, and may cause the death of calves one and a half to three months old.

It is dangerous to prepare linseed cake meal by adding lukewarm water, and to immediately thereafter feed this preparation to calves.

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The methods of preparing advised in this case are safe as regards HCN. It must, however, be noted that in the first method the water must be boiling, as otherwise the temperature to which the meal is raised may not be sufficiently high to destroy the enzyme. Again, when the second is adopted, a sufficient period must be allowed for development and volatilisation (the latter aided by stirring) of the hydrocyanic acid.

I have to acknowledge my indebtedness to the gentlemen mentioned in the text for their assistance. The farmer and those associated with him have my best thanks for the ready way in which they gave information and accepted advice.

A FREAK HEIFER.

By Major C. A. MURRAY,
Royal Army Veterinary Corps.

I enclose photograph of a freak which I saw exhibited last year at Algeciras fair which may be of interest for the *Journal*. It was not possible for me to make a close anatomical study of the heifer, but I gathered from the owner (at one time a small farmer in the Cordova district) that the heifer was out of a cow his own property and was calved eighteen months previously. At birth the freak had four distinct eyes, but when the horns came the two inner eyes atrophied and completely disappeared, leaving a single empty socket. At the time I saw it the socket had been almost closed over by skin, but I was able to put my thumb into the empty cavity.

On opening the mouth, there was a single lower jaw very wide between the rami, and above, in apposition, two rows of perfectly developed molars, a single soft palate, and, running down the centre of the hard palate, which was arched, an irregular row of partially developed molars. The incisors were twice the normal number and in perfect alignment. Judging from the shape of the head at the top, I came to the conclusion that there were two distinct cerebral cavities and two separate brains, but this is merely surmise. The heifer appeared to be in good health and condition and otherwise quite normal.

IMPERFORATE ANUS IN PIGS.

By R. C. G. HANCOCK, B.Sc., M.R.C.V.S.,
Beaconsfield, Bucks.

THE note in the October number of the *Journal*, by Mr. L. J. Kelly, on the above subject, recalls a similar case I had about a year ago. I met a labourer on the way to my surgery with an eight-weeks-old Berkshire pig in a sack. The animal had no sign of an anal opening, nor could I feel the rectum over the site. The pig had fed well and was as well grown as the rest of the litter, but its abdomen was enormously distended. I promised the owner that I should be back in half an hour and would do my best to "make a passage" for him. He asked my fee, and I said "half a crown at least, perhaps more if it turns out to be a long job." However, I saw no more of him.

This spring I was castrating lambs, and while in conversation with the shepherd he mentioned that he had had this particular pig brought to him, and had performed the operation for the price of a drink. I made tactful inquiries as to his technique. He made a cruciform incision with a penknife, and then pushed the blade into the wound until he felt the point encounter fæces. After twisting the blade round he inserted his little finger and dilated the opening. After-treatment consisted of daily insertion of a whittled down tallow candle to lubricate and dilate the wound until healed. The pig did well and made a porker in due time. This shepherd, a most interesting character with thirty years' experience behind him, told me he had never seen any case in a pig before, but that he had frequently noticed it in lambs, and had always operated in the manner described quite successfully. It appears that the owner of the pig, after leaving me, had gone to a public house, and while showing the curiosity to other occupants of the bar, encountered the shepherd, who performed the operation forthwith before an admiring audience.

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RAT-BITE POISONING IN THE DOG.

J. F. D. TUTT, M.R.C.V.S., F.L.S., F.Z.S.,
Winchester.

THE part most commonly bitten is a part of the muzzle, as would naturally be supposed. The symptoms may be purely local, or may be generalised, involving paralysis of the limbs. The local symptoms are swelling of the part bitten, and often enlargement of the lymphatic glands, sometimes accompanied by difficulty in swallowing. Fever may be present in the early stages.

In generalised cases there is marked emaciation and paralysis of the hind limbs, or of all four limbs, or there may be only weakness of the hind limbs, the dog swaying or straddling when walking. Loss of appetite is often noticeable, but in some cases this is not affected.

In one particular case a dog (mongrel) was completely paralysed for three weeks.

Treatment.—Salol is specific in these cases, but its use may have to be prolonged in obstinate cases. The dose depends on the size of the dog. Terriers and allied breeds of the same size will take gr. v. three times a day, or even every four hours; but in the larger breeds, gr. x. is necessary. Local treatment consists in attention to the wound, this being freely dressed with Tinct. Iodine B.P. and made larger if necessary, with hot fomentations and a mild liniment to the swollen parts. Where emaciation follows, a course of tonics is indicated.

ANOMALY OF THE PERICARDIUM IN A BITCH.

BY T. G. BROWNE, M.R.C.V.S.,
Professor of Anatomy in the Veterinary College of Ireland.

Subject.—A collie bitch, eighteen months old; destroyed, being considered incurable because of having developed the nervous form of distemper.

History.—The animal was always apparently healthy and showed no evidence of paralysis up to the time of developing distemper symptoms; but when nine months old it was injured by a motor car; the nature of the injuries, however, were not definitely ascertained, and the animal apparently made a complete recovery.

Autopsy.—The carcase was used for demonstration purposes in the dissecting-room. The chest was opened into by a longitudinal incision about 2 inches to the right of the sternum. On dilating the incision and looking into the right pleural cavity, the heart first presented itself, and it was quite normal in appearance and position,

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but it had no pericardial covering. The epicardium was normal in every respect. The right surface of the heart was in direct contact with the costal pleura (right chest wall); that is to say, the heart was actually in the right pleural cavity. On further examination it was found that the right two-thirds of the pericardium was absent, this sac being only represented by a circular recess, about 2½ inches in diameter, which accommodated only about the left third of the heart. The border of this recess was smooth and regular, and here the serous membrane which lined it appeared to be continuous with the mediastinal pleura.

The pericardiaco-phrenic ligament was present, extending from the lower border of the recess to the lower portion of the diaphragm.

The fold of pleura which normally extends from the pericardium to the floor of the chest was pressed against the lower part of the left chest wall by the heart, but it was otherwise normally disposed, being attached to the lower border of the recess.

A narrow strip of pericardial membrane, about one-fourth of an inch broad, was found attached by one border to the terminations of the cranial and caudal venæ cavæ along the level of the right phrenic nerve, and this was continuous in front and behind with the wall of the recess, that is to say, this strip was simply part of the incomplete pericardium.

Lying in the posterior part of the recess was an elliptical-shaped flap of pericardium, which, when lifted at its free border, was found to be continuous at its posterior (attached) border with the posterior wall of the recess.

The interior of the heart, including the valves, was normal.

Two theories may be advanced to explain how this anomaly may have come about. It may be advocated, firstly, that the condition was congenital in origin, or secondly, that a rupture of the normal pericardium and overlying pleura had taken place at some time during the animal's life. When it is borne in mind that the animal had been injured by a motor when nine months old, one might arrive at the conclusion that this accident accounted for the condition, but it would appear very improbable that such an extensive rupture of the pericardium could have been caused by an accident, without the heart itself having also been injured.

W. Hughes, M.R.C.V.S. (VETERINARY JOURNAL, Vol. 79, No. 8, p. 266), records a case of rupture of the pericardium in a horse, which suddenly collapsed and died after a strenuous hunt. In this case the rupture was apparently very recent, and it would appear that the animal collapsed soon after the rupture had taken place.

In the absence of any evidence that rupture of the pericardium

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can take place without death ensuing, and in view of the comparative frequency with which congenital defects of the pericardium have been found in the human subject, one is forced to conclude that the anomaly in this animal was of congenital origin. In the human subject, however, the defect always involves the left side of the sac, whereas in this case the right two-thirds of the sac was absent.

It would appear that absence or congenital defect of the pericardium has no detrimental effect on the heart, since in the human subject patients with this condition may reach adult life and often attain advanced age without any untoward signs.

An explanation of the condition is to be sought during fœtal life when the pericardial and pleural cœlom begin to be separated from one another. At this time the so-called pulmonary ridge, an elevation from the walls and neighbourhood of the ducts of Cuvier, encircles and gradually obliterates the communication between these two cavities, and descends to the septum transversum or primitive diaphragm as the pleuro-pericardial septum. Under normal conditions the left duct of Cuvier atrophies in early fœtal life, while the right becomes the cranial vena cava.

Since pericardial defects in the human subject invariably involve the left side of the sac, it has been suggested by Perna that such defects may result from too early atrophy of the left duct of Cuvier, perhaps due to some anomaly of the circulation in the great venous trunks; such early atrophy causing arrested development of the pulmonary ridge, thus leading to a defect in the pericardial septum. Such a suggestion, however, cannot be entertained for the case under discussion, since here the defect involved not the left portion of the pericardium but the right two-thirds.

A-TYPICAL RABIES.

By Major R. F. STIRLING, F.R.C.V.S., and Mr. R. V. PILLAI, G.B.V.C.

Subject.—A half-bred fox terrier dog, two years of age, the property of one of us (R.F.S.).

History.—On or about the 15th of December, 1923, the dog got loose at night and was absent until early the next morning. When he returned, there was a small incised wound on the buttock. A servant stated that he had seen this wound being caused by the dog running through a bamboo clump in pursuit of a cat!

The wound healed in five or six days without any pus formation.

Symptoms.—On the evening of January 13th the dog suddenly became ill. He had been running about as usual and immediately

afterwards showed signs of distress. His temperature registered 107·2° F. Blood smears were taken and examined on the 14th, when piroplasms were found in fair numbers. On the 14th he was dull and listless, temperature 104·4° F. Injection of 6 c.c. of a 2 per cent. trypan blue solution was given. On the 15th the owner went out on a tour of inspection duty, and returned on the 20th, to find the animal greatly changed in appearance and character.

He was quiet, listless, and indifferent to the sound of his own name. His eyes were slightly staring. He twice sought out-of-the-way corners. He did not show any of the usual signs of dumb rabies, such as dropping of the jaw or weakness of the lumbar region. He ate meat and drank water sparingly. Temperature 104° F. During the next few days his outward appearance remained unchanged, except that there was a reddish-tinged discharge from the nostrils and that he became very thin.

On the 21st he developed a husky cough which attacked him at intervals ; the noise produced was similar to that which often precedes an attack of vomition in canines.

On the 22nd when he was let loose for a few minutes he started to amble off in a straight line, but was easily brought back. He did not go fast nor was there any swaying of the hind legs. A pleuritic ridge developed on this day.

On the 23rd he recognised his master and seemed slightly better. The nasal discharge was more copious and there was some dysentery.

On the 24th he became suddenly worse, and, without any coma or paralysis intervening, died at 8 p.m., that is eleven days from the onset of the disease.

DIAGNOSIS.—Piroplasmosis, broncho-pneumonia, with a proviso from the 21st onwards (i.e. the time of the onset of the peculiar cough) that it *might* be a form of lethargic rabies.

TREATMENT.—Symptomatic.

POST-MORTEM.—Characterised by negative appearances.

Pharynx and Larynx and Trachea.—Mucous membrane showed streaks of congestion.

Lungs.—The left anterior lobe showed a consolidated area 3 inches × 2 inches and three other smaller patches of grey and red hepatisation. Otherwise the lungs were normal.

Stomach.—Mucous membrane showed irregularly defined congested areas.

Intestines.—No pathological change except for an abnormality a few inches above the terminus of the colon where the intestines had an S-shaped formation, the points being united together by peritoneal adhesions. There was partial obstruction of the intestines at this place.

Liver was congested.

Brain and the rest of the organs were apparently normal.

Immediately the result of post-mortem was known, it was decided to examine the hippocampus major in the local laboratory. The quickest possible method of sectioning was resorted to, and, on staining, Negri bodies were found in abundance.

REMARKS.—The dog was in all probability infected on the night of the 15th of December. The evidence of the servant is not to be relied upon.

Eleven days' duration of life after the onset of symptoms is most unusual. Can it be that latent rabies asserted itself, once the vitality was lowered by an acute attack of piroplasmosis? Another explanation may be that, owing to the mistaken diagnosis and the unremitting attention which the animal received during life in the way of saline injections and so on, the course of the disease was prolonged.

A remarkable fact is that the symptoms do not agree with those of either the true dumb or the lethargic form of rabies. The case is interesting to us if on no other account than that it has taught us both a lesson which he who runs may read.

A SIMPLE METHOD FOR PREVENTING COCKERELS FROM CROWING AT NIGHT.

BY E. MORGAN, F.R.C.V.S., D.V.H.,
Puerto Cabello, Venezuela.

> More certain was the crowing of a cock
> To number hours than in an abbey clock;
> And sooner than the matin-bell was rung
> He *clapp'd his wings* upon his roost, and sung;
> For when degrees fifteen ascended right,
> By sure instinct he knew 'twas one at night.
>
> DRYDEN.

IT is the custom in Venezuela, if there is a sick person in the neighbourhood for whom it is necessary to have perfect peace from noise at night (or if any neighbours suffer from insomnia and consider that Señor Chanticleer should not chant so clear), simply to tie the wings of the cockerels so that the birds cannot possibly lift them. They say that they lack courage to crow unless they can at the same time flap their wings in the air.

This is well worth a trial in any part of the world, as it is a far simpler operation than dissecting the nerves which supply the vocal cords.

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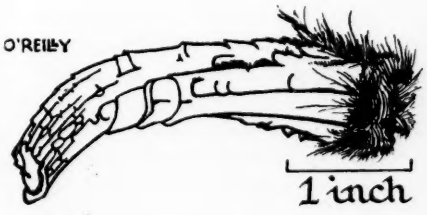
A HORNY CUTANEOUS APPENDAGE ON A CAT.

By JACK PICKUP, M.R.C.V.S.,
Barnet.

THE sketch shows a growth which I removed from a cat's neck on April 3rd. The cat is ten years old, in good condition, and there is a history that six years ago a small wart appeared on the cat's neck which resembled an acorn and cup—the "acorn" being shed periodically. At a later date the wart was cut off with scissors until it



became impossible owing to the hard nature of the growth. The object which I enclose has been approximately four or five years in attaining its present size. Its position was about 2 inches behind the left ear, and it was attached to the body by the skin only. The cat has now been returned to its owner and is doing well.

I enclose a photograph of the cat before the operation.

The specimen proved to be a true horn in character.

Abstracts of Current Literature

Dawson, Major F. W. W.—Destruction of Animal Carriers of Disease. —*Journal of State Medicine*, vol. xxxi. No. 6.

IN dealing with such a wide and varied subject, I feel that I can only touch on a few points, and I propose to confine my remarks to the animals met with in the British Isles.

To commence with the largest, the commonest, and the most dangerous carrier of disease—the common cow. This particular pest is to be found wherever civilised man makes his abode. Upon its infected milk the human young are reared. The same milk forms a considerable bulk of the diet of human beings. When the milk supply fails from disease, the cow is killed, and its flesh used for food.

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As the last speaker on the last day, I do not propose to burden you with figures, the only figures in which you are interested are in terms of a.m. and p.m., and are to be found in the railway time-tables. We all know too well how many lives are lost through drinking milk infected with tuberculosis. The subject of tuberculosis in cattle has been carefully investigated by several Royal Commissions. One of the results has been the passing of the Tuberculosis Order of 1914, which revoked a previous order of 1913. This order aims at the eradication of tuberculosis in cows, whilst endeavouring to secure an adequate milk supply and avoiding any disorganisation of this important industry.

It aims at securing veterinary inspection of cattle, and notification with a view of the destruction of every cow suffering with tuberculosis of the udder and showing signs of clinical tuberculosis or indurated udder, as well as all bovine animals suffering from emaciation due to tuberculosis. The tuberculin test may be applied, but only with the consent of the owner. It must be remembered that the tuberculin test will fail if the animal has been previously injected within a month or two. This has been done by an owner to deceive. The reaction may fail if, just before the test, animals have undergone any marked change in their mode of living, or in the case of cows on heat, or in the case of advanced disease. Cases of tuberculosis in cattle are notifiable. Such animals are slaughtered and a post-mortem is held. Before slaughter, the animal is valued, the value being assessed as the value of the animal at the time of valuation. Compensation is allowed at the following rates :—

No tuberculosis found : Full value of the animal, and a further sum of £1.

Advanced tubercle : One-fourth the value of the beast, or £1 10s., whichever is greater, less half the cost of valuation.

In cases where the whole carcase would not have been condemned : Compensation to the extent of three-quarters of the value, according to the amount of disease present, less half the cost of the valuation.

The Order was in abeyance during the war.

The Report of the Departmental Committee appointed by the Ministry of Health under the chairmanship of Sir H. C. Munro, to consider the meat supply of the country, and especially the slaughtering of animals for food in its report, emphasises the necessity of compensating owners of beasts destroyed under tuberculosis and other similar orders. If the compensation is fair, the owners of cattle themselves become inspectors. Butchers and other persons dealing with them will become keen assistants of the sanitary authority. There will be no concealment of disease and a steady improvement

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will result. For these benefits it is the duty of the general public to pay the small increase in the expenditure involved.

In New Zealand, a young country filled with enthusiasm for the care of its young, where every child brought to maturity is another helper in a sparsely populated land, where new laws produce less economic disturbance, and where new ideas penetrate more rapidly into the minds of the agricultural community, steady, permanent, and considerable progress is being made in the campaign against tuberculosis in cattle.

Through the courtesy of the High Commissioner for New Zealand and his staff, I was enabled to make a study of their methods, and I was convinced of their efficacy. Cows are examined by veterinary inspectors, special care being paid to the udders. Animals showing clinical signs of tuberculosis are destroyed. The tuberculin test is applied to suspected cows, and those giving a positive reaction are destroyed. Mixed milk is submitted to periodic examination for tubercle bacilli. Milk of suspected animals is kept apart and examined for tubercle bacilli. In 1918 3,667 head of cattle were destroyed, the State paying £11,549 18s. 9d. as compensation. It paid for carcases destroyed in slaughter houses, abbatoirs and bacon factories, another £10,888 2s. 10d. In the year referred to the census of cattle was 2,869,465. This gives a percentage of 0·12 for animals destroyed for tuberculosis. I am informed that each year the incidence of tuberculosis is becoming less.

One word of warning to the apostle of hygiene proceeding to India. The ordinary milk supply of that country falls far short of the hygienic ideal. In short, it transgresses every known law of sanitation, including the Sale of Food and Drugs Act. They do not even trouble to use clean water for adulteration purposes. Whatever improvements are to be made, it must be remembered that the cow is a sacred animal. Any attempt at destruction of cattle on account of tuberculosis or any other disease would produce a state of unrest that not even the most misguided of politicians has ever achieved.

As to the method of destruction, it should be done by an expert, by the most humane method available, with the minimum of suffering to the animal, and at a distance from the herd.

I have devoted a considerable proportion of the time allotted to me in a Service discussion to a matter which largely affects children. With a falling birth-rate it is well to remember that every male child is a possible recruit, and every female the putative mother of them.

The next animal with which I propose to deal is the rat. It is unnecessary for me to enumerate the diseases carried by this animal, their number is rapidly approaching "legion." We have to deal with

an animal which lives in our house and eats our food, and one which takes a higher place in the multiplication class than the rabbit. The following are some of the better known methods of dealing with them :—

(1) Starvation ; (2) Poison Baits ; (3) Poisonous Gas ; (4) Traps ; (5) Animals ; (6) Virus.

1. *Starvation.*—The rat lives on food supplied from man's dwelling. If all food and refuse is protected from rats, this pest will disappear. Thus it is possible for A to clear his house. It is objected that they will go to B. Let the whole alphabet combine. Where will they go ? If enough combine the condition of the houses of the objectors will soon convert them. This idea may be called chimerical. Most sanitary suggestions are so labelled at some period of their career. If no other food is available, the efficacy of traps and baits is increased. In vain is the trap set in the sight of any well-fed rat.

2. *Poison Baits.*—These are convenient, cheap, and probably the most efficient method of causing a rapid reduction in the rat population. Barium carbonate 1 lb., flour 3 lb., made into a paste with water will make about 2,400 baits. The flour should be that in ordinary use by the occupants of the house. No condiments, sugar, cheese, or other flavouring substances appear to make the bait more attractive. They should be made with clean hands. Any extraneous odours or taste makes the bait less effective. Baits should be laid out of reach of domestic animals and children. They should be laid in places associated with food and water, that is, where food is cooked, stored, eaten or thrown away, where water is drawn or where it is used for washing. Rats are fond of grease.

3. *Traps.*—If properly used, are capable of effecting a considerable reduction of the rat community. They are more efficient at first. Later the rat becomes shy of them. Traps if disinfected should be washed free of the odour of disinfectant. Slayer traps should be washed and well dried to remove traces of the dead rats. With traps it is possible to examine the animals caught and to investigate their parasites. It is easy to drop a rat-trap with the rat and its parasites complete into a vat of, say, boiling cresol solution, and destroy the animal and his attendant sources of infection at one and the same time.

4. *Poisonous Gas.*—Sulphur dioxide as used in the Clayton apparatus is very efficient, especially in ships. It drives the rats toward any outlet where they can be netted, examined, and destroyed. Hydrocyanic gas, though lighter than air, is very destructive to rats, especially to those in roofs. The roof should be covered with a tarpaulin. It is toxic is very small dilutions.

5. *Animals.*—Rats may be destroyed by dogs, cats, or by the use of ferrets and nets. Rats avoid a house where a cat lives.

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6. *Virus.*—The Liverpool virus has been very favourably reported on by certain observers. Its efficacy is a subject for discussion. The efficiency of the professional rat-catcher in this country is well established, and their work is worthy of public gratitude. Our experience in the East is not so fortunate. Doubtless many of us have met the wily Oriental, whose occupation would be correctly stated as breeder of rats for the cantonment rat-catcher.

The domestic fly is a carrier of most of the acute intestinal diseases. It was our worst enemy in the Boer War, and on certain fronts in the Great War was very active until defeated.

The destruction of the fly should be carried out in all stages of this animal's development.

Flies should be encouraged to lay in special boxes filled with fresh manure. The boxes are changed every morning and the old manure burned. It is essential that other suitable breeding places should be put out of action. All refuse should be covered and burned as soon as possible.

Where it is not possible to burn manure it should be stacked and tightly packed. The ground should be previously prepared by ramming and covering the surface with crude oil. The manure is packed and beaten down as hard as possible. The heat generated in the centre is sufficient to destroy the larvæ. They migrate to the outer layers. The outer layer is removed on the third day and placed in the centre of the heap with the fresh manure.

In climates like our own the heaps should be built upon a grid with a cement floor; the larvæ fall out of the heap and are drowned in the water below.

The adult fly is best dealt with by means of—(*a*) Traps; (*b*) Flame; (*c*) Poisons.

(*a*) Traps may be of various patterns. It should be remembered that flies tend to pass from dark enclosures upwards to lighter spaces. The best baits are beer, fish, and entrails. Tangle foot is very efficient. It is best employed as wires stretched across a room or hung from the ceiling. The wires can be passed through a flame and used again.

(*b*) *Flame.*—When the flies settle at night they can be brought down and killed by the use of a piece of oiled rag or paper which has been lighted. With care there is no danger of fire.

(*c*) *Poisons.*—Arsenite of soda is very efficient. It is liable to be too efficient. A certain regiment in Mesopotamia marched out of their camp leaving several loaves "doped" with sodium arsenite. The sweepers of the new regiment taking over the camp captured the bread. Next day the O.C. had to indent for new sweepers. With reasonable care and with personal supervision of the regimental

medical officers this poison can be made to restrain its activity to the flies.

Formalin placed in a saucer with a little milk or sugar is very useful in kitchens. The strength of the formaldehyde should not exceed 3 per cent. If the formalin be stronger it will act as a deterrent.

Swatters.—Are useful if generally used. Five minutes' work by two men before a meal will clear a messroom of flies.

All methods of destruction of flies should be associated with the starvation method, suggested in dealing with rats.

With regard to the more intimate animals, which may be classed under the popular title of vermin, these have come into their proper prominence during the late war. We have realised their importance in the causation of disease. Sulphur-dioxide has little power of penetration, and is not satisfactory in dealing with these pests. Hydrocyanic acid gas is more efficient. I first saw this method in use in the shops of the Cape Government Railway. A goodly number of their passengers were a race of sturdy and determined farmers who had been brought up to consider economy of water a virtue, who stoutly and patriotically resisted British customs, including the daily bath, whose simple preparations for retiring to rest consisted in the removal of their headgear, and whose morning task was the replacement of the same. You will readily appreciate the necessity of the disinfestation of these coaches.

Their success was an encouragement to me to attack the Castle at Capetown. The building was an old one, with teak beams, which had been brought by the Dutch from Batavia. The deep cracks in these massive beams formed excellent strongholds for the numerous bugs, from which they could defy sulphur, formalin, and cresol. The room was closed in the usual manner for disinfection by SO_2 and the door left open. Earthenware basins were placed on the floor. One basin for every 1,000 cubic feet. In each basin was placed 2 pints of water, 1 lb. commercial sulphuric acid. The crude cyanide of potassium was broken up and placed in muslin bags, 1 lb. each bag. Starting with the basin farthest from the door, a bag was dropped in it, and a rapid move made to the next and so on, till the last basin had been dealt with. I then made for the outside of the door and closed it behind me. In twenty-four hours a window was opened from the outside and then the door. The room was fully aired, other windows being opened. On entering the room, the floor was found littered with dead bugs, flies, etc. They had fallen from the roof, the walls, the beds, and the blankets. They were killed in the crevices in the walls, the cracks in the ceilings, and the joints in the beds. The eggs were also destroyed. During the six months I remained in

Cape Town the only place to become re-infested was the guardroom. A deserter was the cause of the trouble. Hydrocyanic acid gas is a very dangerous disinfectant to use. The process should be carried out by the Medical Officer. It should only be left to subordinates if they are very careful, highly trained, or superfluous. The use of a gas-mask diminishes the risk. Lieutenant-Colonel Glen Liston, I.M.S., whose work in Bombay is so well known, but far from fully appreciated, has introduced an apparatus on the lines of the Clayton apparatus, and suitable for use with this gas. The need of a suitable gas disinfestor is obvious and urgent. Steam is efficient, but has its limitations. It cannot be used for articles affected by heat. It necessitates a certain amount of drying. The apparatus is cumbersome and requires skilled attendants.

An efficient and popular method of disinfestation of leather articles, especially breeches, is to dip them into a vat of petrol. This destroys the vermin, removes the nits, and dry-cleans the garment.

Kondo Schoichi.—Bacteriological Studies on Distemper.—*Journ. de la Soc. vétérinaires de Tokio*, December, 1923.

RESEARCHES reveal the following: (1) The malady can be transmitted by emulsions of the lungs of sick animals. (2) Filtrates give no apparent results. (3) In 85 per cent. of cases the author found on bacteriological examination a bacillus called *Bacillus bronchisepticus*, and in 50 per cent. it was in the pure state and in 35 per cent. in association with streptococci, staphylococci, and even *Bacillus coli*, but always the *Bacillus bronchisepticus* predominated. The positive agglutination of emulsions of *Bacillus bronchisepticus* with serum of sick dogs shows that at least this agent plays a certain rôle in the evolution of the malady, but the inoculations of these cultures to receptive subjects does not always give the same results: accidents of acute and chronic septicæmia. The bacillus isolated was comparable to the *Bacillus bronchisepticus* described by Ferry.

Koppitz, W.—Experiences with Potato Feeding.—*Tierärztliches Archiv*, September 15, 1923.

THE feeding of potato tops is not advisable on account of the solanin they contain; sprouting potatoes are directly dangerous. The copious potato harvest and the bad harvest in other foodstuffs in the year 1922 furnished many practical experiences with potato feeding. In moderate quantity horses stood them well, in large measure they caused indigestion or constipation colic. Cattle did very well on right quantities, but in excess they were very injurious. Digestive disturbances, debility, pica, rashes and itching, abortion, offensive fæces, and loss of hair all resulted from the effects of solanin.

In goats potatoes caused great losses through abortion, difficult parturition, debility, and udder diseases, which often led to death or necessary slaughter. The most injurious effect of potato feeding was shown on swine. Part of the litters were born dead, part died soon, or remained stunted with diarrhœa or moist eczema or bone softening.

Baumuller.—Treatment of Navel Ill with the Dam's Blood.—*Berliner Tierärzt. Woch.*, No. 48.

ALTHOUGH the author has treated all his foals prophylactically and with great success by inoculating them with the mother's blood, yet he gives a report of this modern and much used method in a special case. The foal had severe swellings of both knees, hocks, and fore fetlocks, could not stand up, and dung passed only after use of clysters. Another foal at the same time had been prophylactically inoculated with the mother's blood, so Baumuller took blood from the mother of this foal and injected it into the sick foal, and with such success that its condition immediately improved. Now he inoculated it two or three times with the blood of the strange mother. In fourteen days after the first inoculation the foal stood up alone for the first time. It recovered completely and the joint swellings disappeared entirely. The value of this modified mother's blood treatment was proved several times successfully; in cases where the own mother's blood did not produce success, the blood of another mother with a healthy foal was inoculated into the ailing foal and the disease was overcome.

Schumann, Dr. Paul.—Experiences in the Treatment of Sterility in Horses and Cattle.—*Deutsche Tierärzt. Woch.*, No. 43.

THE statistics stretch over a period of a year and a quarter; of 1,234 cattle, 71·5 per cent. were treated with success. Massage was undertaken in 279 cases, with 81 per cent. of successes; in 42 cases œstrum came on in the first five days, and in 23 cases within six to twenty-four days. Persistent yellow bodies were removed in 302 cases; about half concerned yellow bodies which had not declined after the last parturition, the occurrence of a new heat prevented this; treatment was successful in 73 per cent. of cases. The removal of yellow bodies in sterile animals was performed with a successful result in 340 out of 475 cases. Ninety-six cows out of 170 were treated successfully for catarrhal metritis. Lugol's solution was of marked benefit. In severe catarrh with much collection of mucus alkaline solutions or spirit preceded the infusion of Lugol's solution, and subsequently the uterus was massaged and the cervix swabbed

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with tincture of iodine. A higher cipher would have been reached but for the fact that 38 per cent. of the catarrhal cases were of a tuberculous nature. This indicates that the determining of the nature of the catarrh is necessary before treatment is undertaken. Other changes in the internal organs met with by the author were ovarian tumours 8, deformities of the ovaries and Fallopian tubes 8, pyometra 19, infantilismus 5. The widespread opinion that the principal cause of sterility is due to infectious abortion is not shared by the author, and he does not find that abortion has any healing effect against sterility. Inoculation with living cultures had excellent results. Measures against sterility in mares were not so successful. Of 499 mares treated, 248 conceived again. In purulent endometritis Lugol's solution was used, in slight catarrh physiological salt solution. Paratyphus bacilli were found in 58 mares examined. The abortion bacillus was only found in 3 per cent. of mares out of a total of 717 examined. Inoculation with parabortin is only advised when the diagnosis is bacteriologically confirmed.

Wernicke and Stolte.—Ætiology and Therapy of Follicular Mange in the Dog.—*Deutsche Tierärzt Woch.*, 1923.

THE difficulty in curing acarus outbreaks and the method of spread have hitherto remained unsolved riddles. The work of the above authors is a notable contribution to the solution of the questions. Wernicke during twenty-five years' observation has never seen direct transmission of the disease from animal to animal. Also all artificial attempts at transmission have been fruitless. How then is it that follicular mange has in recent years increased far more than sarcoptic mange? Litters still on the mother, and that have never been out on the streets, have been affected, although the mother shows no trace of the disease. The explanation given is that the dam, some years previously, has been affected with acariasis which has been cured. The whelps must have been brought into the world with an hereditary predisposition to the disease. This inherited predisposition (readiness for disease) of the skin is only present in a decided, limited development stage (teething in the first year of life) when the capability of the skin to resist attacks is reduced. Also in distemper and rickets the resistant power of the skin is reduced and the inherited readiness for the disease increased. Almost all cases of acarus disease occur in the youthful period of life; fresh outbreaks of disease in old dogs are rare. In this connection may be mentioned faults in breeding (refinement and effeminacy through in-breeding) which lead to general degeneration and a diminished power of resistance of the skin to disease. In such de-

generated canine races the in-bred disposition to acarus attack is especially marked. But how comes infection to attack young dogs with this inherited disposition? The acarus mites are present on healthy dogs. They are probably attached to most dogs as harmless skin parasites. Clinically, therefore, a quite healthy mother may be the means of originating an attack, although she has never suffered from acariasis. An apparent disease of the skin through the acarus mites can only be caused in such dogs in which the normal resistant power of the skin has been weakened by the above mentioned causes.

The cure of acariasis often results of itself without treatment when the body grows and the power of resistance of the skin increases with advancing age. By treatment with antiparasitic means alone, without at the same time strengthening the defensive forces of the body, acariasis will not be overcome. In opposition to the case, in sarcoptic mange one rubbing of the whole body does not effect a cure, but often aggravates acariasis; severe cases after twenty to forty applications may show no trace of improvement! An effective attack against acariasis is made more difficult through the power of resistance of the acari situated deeply in the skin, which apparently are not killed with direct anti-parasitic agents, and also because of the widespread prevalence of the mites in the dog. The destruction of mites on the skin of an acarus-infected dog can only be accomplished with the help of the natural defensive reaction of the body by employing agents which cause skin irritation and have at the same time a strong anti-parasitic effect. In such irritative agents tincture of iodine takes the first rank. It produces strong hyperæmia of the skin and increased skin activity. In the early stage acariasis can sometimes be cured with three applications of tincture of iodine. Sulfoliquid produces a similar effect; the sulphuric acid causes hyperæmia, serous infitration and exudation; this salutory inflammation is supported and strengthened by its anti-parasitic effect. Sulfoliquid has the advantage over tincture of iodine in that it is not dangerous to rub the whole of the body with it. A third agent is sublimate spirit (0·5 per cent.); most dogs will stand daily rubbings over the whole body for a week without harm. All these three remedies are, however, to be cast aside if there is already present a severe irritation of the skin. In these cases Wernicke recommends a liniment of two parts of flowers of sulphur, one of oil of tar, and twenty of cod-liver oil. With these declared agents he states that he has cured at least 90 per cent. of all cases. The treatment means much patience, time, trouble, and money. At the present time the cost amounts to the value of the dog or much more. Of the new agents only sulfoliquid has proved valuable.

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VETERINARY SCIENCE IN THE CZECHOSLOVAKIAN REPUBLIC.

THE German Veterinary Surgeons in the Czechoslovakian Republic are united into a National Professional Association, which publishes a Journal, the *Tierarztliches Archiv*, which is now in its third year. It appears in two parts: (A) Scientific, (B) Professional. The Scientific part for 1923 just to hand, consists of 358 pages, and is a record of exceedingly good work done. The journal is published with financial help from the Ministry of Education in Prague, and the Professors of the Veterinary Institute of the German University in Prague furnish a large proportion of the articles. There is an interesting note of eight pages on "Stuttgart Disease of Dogs by Lukes and Derbek," and an exhaustive article by H. Dexler, the Editor, on "Constitutional Hydrocephalus in the Dog," generously illustrated and extending to 165 pages.

There are good articles on "Tuberculin and Immunisation against Tuberculin," by Januschke, and on "Congenital Tuberculosis in Calves," by J. Messner, who also contributes his researches on the bacterial content of the flesh of healthy and diseased food-animals, with an excellent bibliography.

The number also contains a beautifully illustrated paper on a histological study of the skin of naked-necked fowls, being Dr. Belsky's inaugural dissertation at the Veterinary High School of Brünn.

Dr. Joest contributes short pathological notes from the Pathological Institute of the Dresden Veterinary High School, and the volume concludes with a series of book reviews.

Our colleagues in Czechoslovakia have reason to congratulate themselves on this publication.

Reviews

The Topographical Anatomy of the Thorax and Abdomen of the Horse. By O. CHARNOCK BRADLEY, M.D., D.Sc., M.R.C.V.S., Principal Royal (Dick) Veterinary College, Edinburgh, Lecturer on Comparative Anatomy, University of Edinburgh. W. Green & Son, Ltd., Edinburgh. Price 21s.

The present work is a companion to *The Topographical Anatomy of the Limbs of the Horse*, by Dr. Bradley, which has already been reviewed in these columns. The general statements of admiration made there apply equally to the volume now under consideration. There are 85 illustrations spread over 204 pages; many are tricoloured. The use of modern nomenclature—with explanations of the derivations of the names—makes dissection and subsequent reading a pleasure. Perhaps a work on the anatomy of the trunk will not appeal so much to the practitioner as one on the limbs. The latter are certainly subject to more surgical interference and are more mechanical in action. Although this is so, the diagnosis of diseases of the thorax and abdomen depends upon exact anatomical knowledge. One is apt to regard one's dissecting-room experience as more or less sufficient for all time. Dr. Bradley's descriptions force upon the reader the fact that anatomy has progressed rapidly and that it is essential to keep up to date. The work is attractive to read, and leads one on to look up items other than the original one, just as a good dictionary so often does. A. W. N. P.

Les Maladies du Cheval. By F. Breton, Former Chief of the Clinic at the Alfort School, and E. Lapieux, Veterinary Major in the 9th Regiment of Dragoons. Fourth edition, revised and enlarged. Paris. Vigot Frères, Editors, 23 Rue de l'Ecole de Médecine, 1923. A volume in crown octavo, pp. xxiv–500, bound in boards. Price 20 francs.

In this work the authors give clinical pictures of the maladies and affections of the horse in the medical rather than surgical order. In the first chapter they describe how to make a thorough clinical examination of a sick horse (summary and direct inspection, the questions to ask, diagnosis, prognosis, and instructions). The second part comprises the medical clinic, the third the surgical clinic, and the fourth the usual medical treatment. In the surgical clinic stress is laid on the details which it is important the practitioner should not forget. At the end of the book there is diseases of nutrition, and parasitic diseases are also tabulated and discussed. Going on to the ailments of adult sheep, comprehensive articles appear on digestive maladies, intoxications, respiratory, circulatory, genito-urinary, nervous, locomotor, and skin troubles. There are a few words on affections of the eye and several concise and timely pages on the contagious diseases of sheep. The final section deals with surgical and operative technique and anæsthesia. As regards *rickets*, the Professor seems well up to date when he says: "A single fact seems to dominate the etiology of rickets, the insufficient assimilation of the necessary mineral salts for the constitution of the skeleton." The absorption remains below normal as a result of digestive trouble, due to an improper ration, or even with a ration quite rich enough. Part of the treatment for foot-and-mouth disease consists in injecting citrated blood from cured animals subcutaneously into all newly born lambs.

Les Maladies du Mouton. By G. Moussu, Professor at the Alfort Veterinary School and at the National Agricultural Institute, Paris. Vigot Frères, Editors, 23 Rue de l'Ecole de Médecine, 1923. A volume in crown octavo, pp. 329, with 120 figures and 8 coloured plates, bound in boards. Price 20 francs.

The number and value of sheep in France have increased considerably in late years, and this has led to Professor Moussu producing this book, which deals in a simple and concise form with the diseases of sheep. It is a work useful alike to veterinary surgeons, breeders of sheep, and agriculture in general. The first section of the work is devoted to the diseases of lambs, and here the danger of infection of the navel, which gives rise to one or two fatal diseases of the new-born, is pointed out, and measures to avoid and remedy it are described, an innovation in the shape of a homily on how the practitioner should conduct himself towards the public, his employers, and his professional brethren. The fact that the book has gone into its fourth edition is a testimony to its use and circulation in France. Noticeable features of the work are a detailed description of the method of transfusing blood and some lucid pages on ions and electro-ionic medication. The oil of Cevadille used largely in France as a prescription for mange consists of Cevadille seeds 2½ ounces, flowers of sulphur 1½ ounces, calcined alum 7 drachms, oil of arachis (nut oil) 1¾ pints. It is applied lightly with a brush.

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The History of the R.S.P.C.A., 1824–1924. By EDWARD G. FAIRHOLME, O.B.E. (late Capt. R.A.V.C.), Chief Secretary, and WELLESLEY PAIN, Editor. Pp. 298; 15 illustrations. Published by John Murray. Price 7s. 6d.

This book, containing the history of the R.S.P.C.A. for the last century, will strongly appeal to all who have at heart the prevention of cruelty to animals. It is a history of the formation of the R.S.P.C.A. since its initiation in 1824 to the present time. In 1809 Lord Erskine, the Lord High Chancellor of England, introduced in the House of Lords a Bill for "preventing wanton and malicious cruelty to animals." It passed through the Lords, but met with much opposition in the Commons, and eventually was lost. Within a few months of the rejection of Lord Erskine's Bill, the first Society for preventing cruelty to animals was established in Liverpool under the name of "The Society for the Suppression of Wanton Cruelty to Animals," but it was short lived. In the following year Lord Erskine presented another Bill, which, however, had to be withdrawn, and in 1821 Richard Martin brought a Bill into the House of Commons to "prevent the ill-treatment of horses and other animals." This passed the Commons, but was lost in the House of Lords; but in 1822 he tried again, and on this occasion was successful. Two years later, on June 16, 1824, the Society for the Prevention of Cruelty to Animals came into being, with the Rev. Mr. Broome in the chair. During its first year the Society successfully prosecuted in 149 cases of cruelty to animals, and at the present time the number averages over 4,000 cas s a year. In 1840 Her Majesty Queen Victoria gave permission for the Society to use the prefix Royal, and its activities now extend all over the British Isles, employing over 200 Inspectors, whose instructions specifically inform them that they must not attempt to do the work of a Veterinary Surgeon, and that when an animal requires medical or surgical treatment, the Inspector's first duty is to call in a properly qualified man to attend to it. The work of the R.S.P.C.A., in assisting the Royal Army Veterinary Corps during the great European War, will always be remembered with gratitude, and there is no doubt that the work of the veterinary profession and the Royal Society for the Prevention of Cruelty to Animals can, by carrying on side by side, do more than anything else in the world to alleviate the sufferings of the dumb creation.

Médecine et Chirurgie Canines. By P. J. Cadiot, Director of the Alfert School, and F. BRETON, Veterinary Surgeon, Paris. Fourth Edition. Asselin et Houzeau. Editors, Vigot Frères, 23 Rue de l'Ecole de Médecine, Paris. Pp. xii–420. 72 figures in the text. Price 20 francs.

This is the fourth edition of a very useful little text-book on the medicine and surgery of the dog. All the diseases and ailments of the dog likely to be met with in every-day practice are dealt with and remedial measures of a practical kind are indicated. There are many prescriptions giving the medicinal agents that have been found serviceable in individual instances. The chapter on tuberculosis comprising 15 pages is exceedingly interesting, and a model discourse on the subject and the illustrations are of special value from a clinical point of view. Practitioners ought not to forget that diffuse osteo-periostitis is often symptomatic of tuberculosis in the dog. On the use of *tuberculin* for diagnostic purposes, the authors

remark : " tuberculin by subcutaneous injection in a dose of 1 to 10 centigrammes causes a characteristic reaction in two-thirds of the cases ; the general temperature rises 1·5 to 3 degrees. It is an early reaction ; it begins from the fourth to tenth hour, generally about the fifth or sixth hour. Other methods of using tuberculin give precise indications in part of the cases, but they are inferior to hypodermic injection."

ERRATUM.

In the review of Fox, "Disease in Captive Wild Mammals and Birds," published by the J. B. Lippincott Company, London, which appeared in our issue of July 1924, the price of this book was quoted at 21s. This should read 60s.

Obituary

THE LATE MR. E. H. STENT, M.R.C.V.S.

BORN in Sheffield in 1868, Mr. Stent qualified at the New College, Edinburgh, in 1892, and had been in practice in Manchester for thirty-one years.

By his death the profession has lost a prominent man, and the Lancashire area in particular a sound and modern practitioner. His genial and tactful nature led him to acquire a host of friends, and he was one of the best-known experts in canine diseases in the North of England. During the War he visited America and Canada under Government orders to purchase horses for the Army. Whilst over there he observed things carefully and brought back with him many interesting and new views in connection with veterinary science, and on his return he was perhaps the first man to give a full account of botulism in fowls to practitioners in this country.

As a consultant he was always correct in his attitude and very helpful. A live member of the Lancashire Veterinary Medical Association, he had acted as its treasurer for many years, being, too, a trustee of the National Veterinary Benevolent and Mutual Defence Society. His energetic work for these two Societies will be hard to replace, and the profession in the North of England has lost a member for whom it will be difficult to find a substitute.

NOTICES

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